

**AMENDMENTS TO THE CLAIMS:**

The listing of claims shown below will replace all prior versions, and listings, of claims in the Application:

Claim 1 (Original) A method for the characterization of a particle comprising the steps of:  
observing a first physical position of a particle,  
  
optically illuminating the particle to subject it to an optical force,  
  
observing the second physical position of the particle, and  
  
characterizing the particle based at least in part upon reaction of the particle to the optical force.

Claim 2 (Original) The method of claim 1 wherein the optical illumination includes an optical gradient field.

Claim 3 (Original) The method of claim 2 wherein the optical gradient field is a moving optical gradient field.

Claim 4 (Original) The method of claim 1 wherein the optical illumination includes an optical scattering force field.

Claim 5 (Original) The method of claim 1 wherein the optical illumination includes a moving optical gradient force field and another force.

Claim 6 (Original) The method of claim 1 wherein the first position and second position are different.

Claim 7 (Original) The method of claim 1 wherein the positions are the same.

Claim 8 (Original) The method of claim 7 wherein the characterization includes non-movement as indicative of the state.

Claim 9 (Original) The method of claim 7 wherein the characterization includes a non-positional parameter.

Claim 10 (Original) The method of claim 9 wherein the non-positional parameter is rotation of the particle.

Claim 11 (Original) The method of claim 6 wherein the characterization involves a comparison of the first position and the second position.

Claim 12 (Original) The method of claim 11 wherein the amount of difference of movement indicates a characterization state.

Claim 13 (Original) The method of claim 11 wherein the direction of movement is indicative of a characterization state.

Claim 14 (Original) The method of claim 1 wherein the characterization utilizes the optophoretic constant of the particle.

Claim 15 (Original) The method of claim 1 wherein the characterization utilizes the optophoretic signature of the particle.

Claims 16-43 (Cancelled)

Claim 44 (Previously added) The method of claim 1, wherein the reaction of the particle to the optical force is dependent at least in part on the dielectric constant of the particle.

Claim 45 (Previously added) The method of claim 1, wherein the particle is a cell.

Claim 46 (Previously added) The method of claim 45, wherein the cell is unlabeled.

Claims 47-81 (Cancelled)